

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE: U.S. PATENT NO. 4,831,031  
ISSUED: MAY 16, 1989  
TO: JOHN A. LOWE, III, ET AL.  
FOR: ARYL PIPERAZINYL-(C<sub>2</sub> OR C<sub>4</sub>)  
ALKYLENE HETEROCYCLIC  
COMPOUNDS HAVING  
NEUROLEPTIC ACTIVITY  
FROM: SERIAL NO. 07/146,886  
OF: JANUARY 22, 1988

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MAR 30 2001

PATENT EXTENSION  
A/C PATENTS

Commissioner for Patents  
Box Patent Extension  
Washington, DC 20231

Sir:

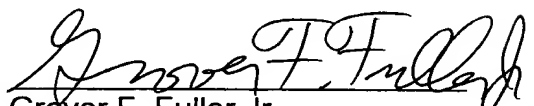
EXTENSION OF PATENT TERM UNDER 35 U.S.C. §156

Transmitted herewith are the application papers of PFIZER INC., dated March 29, 2001, for extension of the term of U.S. Patent No. 4,831,031 under 35 U.S.C. §156, based on the regulatory review period for GEODON Capsules (ziprasidone hydrochloride monohydrate), together with two duplicate copies as required under 37 C.F.R. §1.740(b).

As set forth under 37 C.F.R. §1.20(j), please charge the sum of \$1,120.00 to Deposit Account No. 16-1445 for the filing of this application for extension of patent term. Also, please charge any underpayment, or any additional fees that may be required, or credit any overpayment, to Deposit Account No. 16-1445. Two copies of this paper are enclosed.

Respectfully submitted,  
PFIZER INC.

Date: March 29, 2001

By:   
Grover F. Fuller Jr.  
Attorney for Applicant  
Reg. No. 31,760  
Tel.: (212) 573-1390

PFIZER INC.  
Legal Division  
235 East 42nd Street  
New York, NY 10017-5755

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE: U.S. PATENT NO. 4,831,031  
ISSUED: MAY 16, 1989  
TO: JOHN A. LOWE, III, ET AL.  
FOR: ARYL PIPERAZINYL-(C<sub>2</sub> OR C<sub>4</sub>) ALKYLENE  
HETEROCYCLIC COMPOUNDS HAVING  
NEUROLEPTIC ACTIVITY  
FROM: SERIAL NO. 07/146,886  
OF: JANUARY 22, 1988

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PATENT EXTENSION  
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Commissioner for Patents  
Box Patent Extension  
Washington, DC 20231

Sir:

APPLICATION FOR EXTENSION OF THE TERM OF  
UNITED STATES PATENT NO. 4,831,031 UNDER 35 U.S.C. §156  
FOR GEODON CAPSULES (ZIPRASIDONE HYDROCHLORIDE MONOHYDRATE)

Your applicant, PFIZER INC., a corporation organized and existing under the laws of the State of Delaware, and having a place of business at 235 East 42nd Street, New York, NY 10017, United States of America, represents that it is the owner of the entire right, title and interest in and to Letters Patent of the United States No. 4,831,031 granted to JOHN A. LOWE, III, ET AL. on the 16th day of May, 1989, for ARYL PIPERAZINYL-(C<sub>2</sub> OR C<sub>4</sub>) ALKYLENE HETEROCYCLIC COMPOUNDS HAVING NEUROLEPTIC ACTIVITY, by virtue of assignments, recorded in the United States Patent and Trademark Office (hereinafter referred to as "the Patent Office") on the 22nd day of January, 1988 at Reel 4876, Frame 0784 and on the 16th day of February, 1999 at Reel 11306, Frame 0092.

Pursuant to the provisions of 37 C.F.R. §1.730, your applicant hereby applies for an extension of the term of Patent No. 4,831,031 under 35 U.S.C. §156 of 5 years, based on the materials set forth herein and in the accompanying papers.

In the materials which follow herein, numbered paragraphs (1) through (15) correspond to paragraphs (1) through (15) of 37 C.F.R. §1.740(a).

(1) The approved product is GEODON Capsules (ziprasidone hydrochloride monohydrate). GEODON Capsules consists of ziprasidone hydrochloride monohydrate and pharmaceutically-acceptable carriers. Ziprasidone hydrochloride

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monohydrate is the generic name of the chemical compound which is known by the PFIZER INC. Code Number, CP-88,059-1, and it is further identified as follows:

*Chemical Names*

5-[2-[4-(1,2-benzisothiazol-3-yl)-1-piperazinyl]ethyl]-6-chloro-1,3-dihydro-2H-indol-2-one hydrochloride monohydrate

5-(2-(4-(1,2-benzisothiazol-3yl)piperazinyl)ethyl)-6-chlorooxindole hydrochloride

5-[2-[4-(1,2-benzisothiazol-3-yl)-1-piperazinyl]ethyl]-6-chloro-1,3-dihydro-2H-indol-2-one monohydrochloride monohydrate

*Molecular Formula*

$C_{21}H_{21}ClN_4OS \cdot HCl \cdot H_2O$

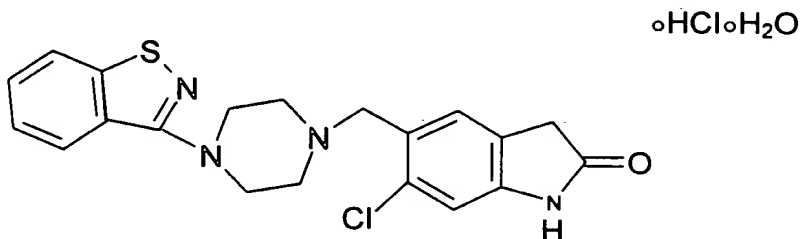
*Molecular Weight*

467.4 (monohydrochloride monohydrate salt)

*Physical Description*

GEODON Capsules contain a monohydrochloride, monohydrate salt of ziprasidone. Ziprasidone hydrochloride monohydrate is a white to slightly pink powder. Ziprasidone Capsules are supplied for oral administration in 20 mg (blue/white), 40 mg (blue/blue), 60 mg (white/white) and 80 mg (blue/white) capsules. Ziprasidone capsules contain ziprasidone hydrochloride monohydrate, lactose, pregelatinized starch, and magnesium stearate.

*Chemical Formula*



(2) GEODON Capsules (ziprasidone hydrochloride monohydrate) was subject to regulatory review under section 505(b) of the Federal Food, Drug and Cosmetic Act, which is codified at 21 U.S.C. §355(b).

(3) GEODON Capsules (ziprasidone hydrochloride monohydrate) received permission for commercial marketing or use under section 505(b) of the Federal Food, Drug and Cosmetic Act, 21 U.S.C. §355(b), on February 5, 2001. It was approved for the treatment of schizophrenia.

(4) The active ingredient in GEODON Capsules is ziprasidone hydrochloride monohydrate. Said active ingredient has not been previously approved for

commercial marketing or use under the Federal Food, Drug and Cosmetic Act, the Public Health Service Act or the Virus-Serum-Toxin Act.

(5) This application is being submitted within the sixty day period permitted for its submission pursuant to 37 C.F.R. §1.720(f). The last day on which this application could be submitted is April 6, 2001.

(6) The patent for which an extension is being sought is identified as follows:

Inventors: JOHN A. LOWE, III, ET AL.

Patent No.: 4,831,031

For: ARYL PIPERAZINYL-(C<sub>2</sub> OR C<sub>4</sub>) ALKYLENE HETEROCYCLIC COMPOUNDS HAVING NEUROLEPTIC ACTIVITY

Issued: MAY 16, 1989

Expires: MARCH 2, 2007

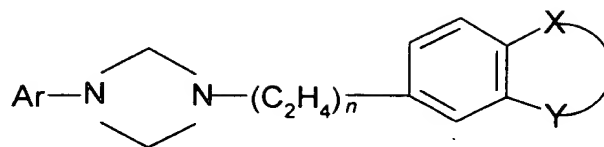
(7) A copy of Patent No. 4,831,031, the patent for which an extension is being sought, is attached hereto as EXHIBIT A.

(8) A request for certificate of correction for Patent No. 4,832,031 was filed on March 1, 2001 and to this date has yet to be ruled on (a copy of the Request for Certificate of Correction and accompanying documents are included herewith as EXHIBIT B). A petition for correction of inventorship for Patent No. 4,831,031 was filed on February 17, 1999 and granted on September 14, 1999 (a copy of the decision granting the petition and accompanying certificate is included herewith as EXHIBIT C). Three maintenance fee payments for Patent No. 4,831,031 were made to keep the patent in force beyond 12 years from its issue date (a copy of each of the receipts from such payments is included herewith as EXHIBIT D). Patent No. 4,831,031 has no disclaimers or re-examination certificates.

(9) Patent No. 4,831,031 claims the approved product, pharmaceutical compositions including the approved product, and a method of using the approved product. Claims 1 and 4 claim the approved product *per se*; claims 5 and 8 claim pharmaceutical compositions which contain the approved product and are useful for the approved use; and claim 9 claims the approved use of the approved product. A showing that lists each applicable patent claim and demonstrates the manner in which each applicable patent claim reads on the approved product, a pharmaceutical composition containing the approved product, or a method of using the approved product is as follows:

Claim 1 of Patent No. 4,831,031 reads as follows:

A compound of the formula



or a pharmaceutically acceptable acid addition salt thereof, wherein

Ar is benzoisothiazolyl or an oxide or dioxide thereof each optionally substituted by one fluoro, chloro, trifluoromethyl, methoxy, cyano, or nitro;

n is 1 or 2; and

X and Y together with the phenyl to which they are attached form benzothiazolyl; 2-aminobenzothiazolyl; benzoisothiazolyl; indazolyl; 2-hydroxyindazolyl; indolyl; oxindolyl optionally substituted by one to three of (C<sub>1</sub>-C<sub>3</sub>) alkyl, or one of chloro, fluoro or phenyl, said phenyl optionally substituted by one chloro or fluoro; benzoxazolyl; 2-aminobenzoxazolyl; benzoxazolonyl; 2-aminobenzoxazolonyl; benzothiazolonyl; bezoimidazolonyl; or benzotriazolyl.

When the compound of claim 1 is a pharmaceutically acceptable acid addition salt and the salt is the hydrochloride monohydrate, and when, Ar is benzoisothiazolyl; n is 2; and X and Y together with the phenyl to which they are attached for oxindolyl substituted by one chloro, the compound claimed is ziprasidone hydrochloride monohydrate. Therefore claim 1 reads on the approved product.

Claim 4 of Patent No. 4,831,031 claims the same compounds as claim 1, except that the scope of the X and Y together with the phenyl to which they are attached form oxindole. In ziprasidone hydrochloride monohydrate X and Y together with the phenyl to which they are attached form oxindole. Thus, claim 4 also claims ziprasidone hydrochloride monohydrate. Therefore, claim 4 reads on the approved product.

Claim 5 of Patent No. 4,831,031 claims a pharmaceutical composition having neuroleptic activity comprising a compound according to claim 1 in an amount effective in the treatment of neuroleptic diseases and a pharmaceutically acceptable carrier. Since "neuroleptic activity" includes treatment of schizophrenia and claim 1 claims ziprasidone hydrochloride monohydrate, claim 5 reads on the approved product.

Claim 8 of Patent No. 4,831,031 claims the same pharmaceutical composition as in claim 5, except that X and Y together with the phenyl to which they are attached

form oxindole. In ziprasidone hydrochloride monohydrate X and Y together with the phenyl to which they are attached form oxindole. Thus, claim 8 also claims ziprasidone hydrochloride monohydrate. Therefore, claim 8 reads on the approved product.

Claim 9 of Patent No. 4,831,031 claims a method for treating neuroleptic diseases which comprises administering to a subject in need of such treatment a neuroleptic amount of a compound of claim 1. Since "neuroleptic diseases" includes schizophrenia and claim 1 claims ziprasidone hydrochloride monohydrate, claim 9 reads on a method of using the approved product for the approved use.

(10) The relevant dates and information pursuant to 35 U.S.C. §156(g) in order to enable the Secretary of Health and Human Services to determine the applicable regulatory review period are as follows:

- An exemption under subsection (i) of section 505 of the Federal Food, Drug and Cosmetic Act became effective for GEODON Capsules (ziprasidone hydrochloride monohydrate) on May 3, 1990, following receipt by the Food and Drug Administration of Investigational New Drug ("IND") Application No. 34,629 on April 3 1990<sup>1</sup>.
- A New Drug Application ("NDA") under section 505(b) of the Federal Food, Drug and Cosmetic Act for GEODON Capsules (ziprasidone hydrochloride monohydrate) was initially submitted on March 17, 1997, as NDA No. 20-825.<sup>2</sup>
- NDA No. 20-825 was approved on February 5, 2001.

(11) A brief description of the significant activities undertaken by the marketing applicant during the applicable regulatory review period with respect to the approved product and the significant dates applicable to such activities is attached hereto as EXHIBIT E.

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<sup>1</sup> The IND, NDA, and other submissions and correspondence related to GEODON were submitted to the FDA with the product name ZELDOX.

<sup>2</sup> A non-approvable letter for NDA No. 20-825, dated June 17, 1998, was issued by the FDA and NDA No. 20-825 was resubmitted on March 10, 2000.

(12) Applicant is of the opinion that Patent No. 4,831,031 is eligible for an extension under 35 U.S.C. §156. The length of extension claimed is 5 years.

The eligibility requirements of 35 U.S.C. §§156(a) and 156(c)(4) have been satisfied as follows:

- Patent No. 4,831,031 claims a product, GEODON Capsules (ziprasidone hydrochloride monohydrate), pharmaceutical compositions including a product, GEODON Capsules (ziprasidone hydrochloride monohydrate), and a method of using a product, GEODON Capsules (ziprasidone hydrochloride monohydrate).
- Patent No. 4,831,031 is currently set to expire on March 2, 2007 (i.e., the term of the patent has not yet expired).
- The term of Patent No. 4,831,031 has never been extended under subsection (e)(1) of 35 U.S.C. §156.
- This application for extension is being submitted by PFIZER INC., the owner of record of Patent No. 4,831,031, in accordance with the requirements of paragraphs (1) through (4) of 35 U.S.C. §156(d).
- The product, GEODON Capsules (ziprasidone hydrochloride monohydrate), has been subject to a regulatory review period under section 505(b) of the Federal Food, Drug and Cosmetic Act before its commercial marketing or use, and the permission for said commercial marketing or use is the first permitted commercial marketing or use of the product under section 505(b) of the Federal Food, Drug and Cosmetic Act.
- No patent has to this date been extended, nor has any other extension been applied for, under subsection (e)(1) of 35 U.S.C. §156, for the regulatory review period which forms the basis for this application for extension of the term of Patent No. 4,831,031.

The length of extension of the term of Patent No. 4,831,031 of 5 years claimed by applicant was determined according to the provisions of 37 C.F.R. §1.775 as follows:

- According to 37 C.F.R. §1.775(b), the length of extension is equal to the regulatory review period for the approved product, reduced as appropriate pursuant to paragraphs (d)(1) through (d)(6) of 37 C.F.R. §1.775.
- According to 37 C.F.R. §1.775(c), the regulatory review period is the sum of:  
(A) the number of days in the period beginning on the date the exemption under subsection 505 of the Federal Food, Drug and Cosmetic Act became effective for the approved product and ending on the date the NDA was initially



submitted under subsection 505 of the Federal Food, Drug and Cosmetic Act; and (B) the number of days in the period beginning on the date the NDA was initially submitted under subsection 505 of the Federal Food, Drug and Cosmetic Act and ending on the date the NDA was approved. The exemption under subsection 505(i) of the Federal Food, Drug and Cosmetic Act became effective on May 3, 1990; the NDA was initially submitted on March 17, 1997; and the NDA was approved on February 5, 2001. Hence, the regulatory review period under 37 C.F.R. §1.775(c) is the sum of the period from May 3, 1990 to March 17, 1997 and from March 18, 1997 to February 5, 2001. This is the sum of 2,510 days and 1,421 days, which is 3,931 days.

- According to 37 C.F.R. §1.775(d)(1)(i), the number of days in the regulatory review period which were on and before the date on which the patent issued must be subtracted. Patent No. 4,831,031 issued on May 16, 1989. Hence there were no days in the regulatory review period on or before the date on which the patent issued, and the regulatory review period is still from May 3, 1990 to March 17, 1997 and from March 18, 1997 to February 5, 2001. Thus, the sum remains 3,931 days (2,510 days plus 1,421 days).
- 37 C.F.R. §1.775(d)(1)(ii) does not apply.
- According to 37 C.F.R. §1.775(d)(1)(iii), the regulatory review period must then be reduced by one-half of the days remaining in the period defined in 37 C.F.R. §1.775(c)(1). This is one-half of 2,510 days, which is 1,255 days. After subtraction, this now leaves a reduced regulatory review period of 1,255 days plus 1,421 days, which is 2,676 days.
- According to 37 C.F.R. §1.775(d)(2), the reduced regulatory review period of 2,676 days must be added to the expiration date of Patent No. 4,831,031 (i.e., March 2, 2007). This gives a date of June 29, 2014. According to 37 C.F.R. §1.775(d)(3), 14 years must be added to the date of approval of the approved product. This gives a date of February 5, 2015. According to 37 C.F.R. §1.775(d)(4), the earlier of these dates must be selected. The earlier of these dates is June 29, 2014.
- The provisions of 37 C.F.R. §1.775(d)(5) apply to this application, because Patent No. 4,831,031 issued after September 24, 1984. Addition of 5 years to the expiration date of Patent No. 4,831,031 (March 2, 2007) gives a date of March 2, 2012. The date calculated according to 37 C.F.R. §1.775(d)(4) is

June 29, 2014. According to 37 C.F.R. §1.775(d)(5)(ii), the earlier of these dates must be selected. The earlier of these dates is March 2, 2012.

- 37 C.F.R. §1.775(d)(6) does not apply because Patent No. 4,831,031 issued on May 16, 1989, after September 24, 1984.

(13) Applicant acknowledges a duty to disclose to the Commissioner of Patents and Trademarks and the Secretary of Health and Human Services any information which is material to the determination of entitlement to the extension of 5 years which is being sought to the term of Patent No. 4,831,031.

(14) The prescribed fee under 37 C.F.R. §1.20(j) for receiving and acting on this application for patent term extension is to be charged to Deposit Account No. 16-1445, as requested in the enclosed transmittal letter.

(15) Please direct all inquiries and correspondence relating to this application for patent term extension as follows:

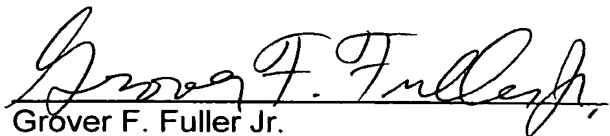
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Tel: (212) 573-1390  
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According to 37 C.F.R. §1.740(b), two duplicate copies of these application papers are enclosed herewith.

Applicant respectfully requests prompt and favorable action on the merits of this application for extension of the term of Letters Patent No. 4,831,031 of 5 years, based on the regulatory review period for GEODON Capsules (ziprasidone hydrochloride monohydrate).

Respectfully submitted,  
PFIZER INC.



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Attorney for Applicant  
Reg. No. 31,760  
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Date: March 29, 2001

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